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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,315	04/08/2004	Andrei Grebennikov	18154	7461
26794	7590	09/16/2005	EXAMINER	
TYCO ELECTRONICS CORPORATION 4550 NEW LINDEN HILL ROAD, SUITE 450 WILMINGTON, DE 19808			NGUYEN, HIEU P	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/820,315	<b>Applicant(s)</b> GREBENNIKOV ET AL. 	
	<b>Examiner</b> Hieu Nguyen	<b>Art Unit</b> 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.  
 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-10 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 24 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/21/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Apel (US 6894561).

Regarding claims 1 and 6, Fig. 4 of Apel discloses a method as well as a structure for bias a power amplifier (similar to Applicant's Fig. 4) comprising: a first

transistor (426) with a reference voltage ( $V_{bias1}$ ) coupled to its base terminal; a second transistor (427) coupled to the emitter terminal of the first transistor at its collector terminal; and a third transistor (428) with its base terminal coupled to the first and second transistors, and to an input signal ( $R_{Fin}$ ).

Regarding claim 2, Apel discloses everything claimed. In addition, Apel discloses a resistor (see Fig. 4, resistor 435) coupled in series between the emitter terminal of the first transistor and the collector terminal of the second transistor.

Regarding claim 3, Apel disclosed everything claimed as applied as applied to claim 1. In addition, Apel further discloses the input signal comprises a radiofrequency signal (see Fig. 4,  $R_{Fin}$ ).

Regarding claim 4, Apel discloses everything claimed as applied to claim 1. In addition, Apel discloses the bias circuit, wherein a second reference voltage applied to the base of the third transistor is substantially linear [col. 3, lines 15-19].

Regarding claim 5 Apel discloses everything claimed as applied to claim 1. In addition, Apel discloses the bias circuit, wherein the quiescent current of the bias circuit is substantially linear (col. 3, lines 15-19).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7-8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Apel in view of Nishimura (US 6809592).

Regarding claim 7, Apel discloses everything claimed as applied to claim 6 except for a method for biasing a power amplifier “wherein the step of applying a DC reference current comprises applying a current in the range from 10 to 100 microamperes”. However, Nishimura [col. 3, lines 51-58] disclose a method for biasing a power amplifier, wherein the steps of applying a DC reference current comprises applying a current in the range of about tens of micro microamperes.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Nishimura into the power amplifier of Apel by “applying a DC reference current in the range from tens of microamperes”. The ordinary artisan would have been motivated to modify Apel in the manner set forth above for at least the purpose of minimizing power consumption [Nishimura: col. 2, lines 22-25].

Regarding claim 8, Apel discloses everything claimed as applied to claim 7. In addition, Apel discloses the method a reference voltage applied to the at least one device cell is substantially linear [col. 3, lines 15-19].

Claim 9-10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant’s admitted prior art view of Apel (US 6894561).

Regarding claim 9, Applicant's prior art (Fig. 1) shows a power amplifier circuit comprising: at least one control circuit (110) coupled to an input terminal (101); a power amplifier array (120) coupled to the at least one control circuit; and an adder (140) coupled to at least one output of the power amplifier array and coupled to an output terminal (102). Applicant's prior art fails to show "the power amplifier array further comprises at least one bias circuit". However, Fig. 4 of Apel discloses a power amplifier (similar to Applicant's Fig. 4) comprising: a first transistor (426) with a reference voltage ( $V_{bias1}$ ) coupled to its base terminal; a second transistor (427) coupled to the emitter terminal of the first transistor at its collector terminal; and a third transistor (428) with its base terminal coupled to the first and second transistors, and to an input signal (RF<sub>in</sub>).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Apel into the power amplifier of Applicant's prior art by having the specific bias circuit. The ordinary artisan would have been motivated to modify Applicant's prior art in the manner set forth above for at least the purpose of maintaining linearity of the power amplifier [Apel: col. 2, lines 6-9].

Regarding claim 10, Applicant's prior art discloses everything claimed as applied to claim 9 except for "the power amplifier, wherein a second reference voltage applied to the base of the third transistor is substantially linear. However, Apel discloses [col. 3, lines 15-19] the power amplifier, wherein a second reference voltage applied to the base of the third transistor is substantially linear.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the teachings of Apel into the power amplifier of Applicant's prior art by having a second reference voltage linearly applied to the base of the third transistor. The ordinary artisan would have been motivated to modify Applicant's prior art in the manner set forth above for at least the purpose of maintaining linearity of the power amplifier [Apel: col. 2, lines 6-9].

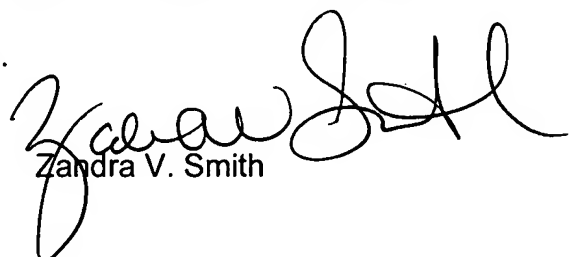
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu Nguyen whose telephone number is 571-272-0218. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 517-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hieu Nguyen

  
Zandra V. Smith

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Primary Examiner

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